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EXAMINER

ABRAHAM, ESAW T

ART UNIT PAPER NUMBER

2133

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/813,343

Applicant(s)

LEON ET AL.

Examiner

Esaw T Abraham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim objections

1. Claims **1, 2, 9, 2, 21, 22 and 24**, are objected to because of the following informalities:

a) Please change the phrase “A method for data repair in a system capable of point-to-multipoint communication, the method comprising:” --- to --- “A method for data repair in a point-to-multipoint communication system, the method comprising:” (see claims 1 and 21).

b) Claim 2 is objected to under 37 CFR 1.75 (c) as being of improper dependent form since it depends from 0. Applicant is required to cancel the claims(s), or amend the claims (s) to replace the claims(s) in proper dependent form, or rewrite the claim (s) in independent form. For the purpose of the examination the Examiner assumes the Applicant intended claim 2 to depend from claim 1.

c) Please change the phrase “capable of data repair, the system comprising:” --- to --- “capable of repairing data, the point-to-multipoint communication system comprising:” (see claim 9 line 1).

d) Please change the phrase “a sender device capable of point-to-multipoint communication” --- to --- “a sender device capable of transmitting data via point-to-multipoint communications” (see claim 9, line 3).

e) Claims 15 and 22 recite, “A computer code product” **in the preamble**. CFR § 1.75 states that the specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention or discovery. A computer product does not indicate what a subject matter the claims are directed to.

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f) Please change the phrase “capable of data repair, the system comprising:” --- to --- “capable of repairing data, the point-to-multipoint communication system comprising:” (see claim 24 line 1).

g) Please change the phrase “a sender device capable of point-to-multipoint communication” --- to --- “a sender device capable of transmitting data via point-to-multipoint communications” (see claim 24, line 3).

Claim Rejections - 35 USC § 101, Non Statutory

2. Claims **15 and 22** are rejected under 35 U.S.C. 101 because the claimed invention is directed to **non-statutory** subject matter because: For example; a compute code product comprising a computer code configured to transmit data from a sender determine if expected data was not received by the receivers, make a data repair request if data was not received [emphasis added]... do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the compute program's functionality to be realized. Therefore, they are neither **computer components nor statutory** processes, as they are not “acts” being performed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S. C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

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international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1, 9, 15 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Gupta et al. (U.S. PN: 6,577,599).

As per claims 1, 9 and 18:

Gupta et al. teach or disclose a method and an apparatus for efficient and reliable multicasting in a network environment and a sender transmits identical information encapsulated in data packets to a plurality of receivers wherein periodically, receivers submit responses that include control information regarding the loss (expected data not received) or receipt of data packets transmitted by the sender and using these information a sender retransmits any undelivered packets to intended receivers (see col. 6, lines 14-23 and abstract). Gupta et al. in figure 3, step (310) teach that the sender analyzes data-loss response generated by the receiver and further adjusts the response rate at step (330), so that the multicasting (point-to-multipoint) of information is accomplished most optimally (i.e. minimizing the network traffic, and maximizing error recovery and repair) (see col. 9, lines 28-39).

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As per claim 15:

Gupta et al. teach all the subject matter claimed in claims 1 and 9 including Gupta et al. teach a system comprising a processor, a memory, code executed by said processor configured to multicast information to a plurality of receivers in a computer network, said code comprising a method for transmitting information to one or more receivers, a method for receiving one or more responses from said one or more receivers and a method for retransmitting information to said one or more receivers based on said one or more responses (see col. 13, lines 11-12 and claim 5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere CO.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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4. Claims 2-8, 10-14, 16, 17 and 19-24, are rejected under 35 U.S.C. 103(a) as being unpatentable over Gupta et al. (U.S. PN: 6,577,599).

As per claims 2, 10 and 14:

Gupta et al. teach all the subject matter claimed in claim 1. Gupta et al. do not explicitly teach scheduling point-to-multipoint (multicasting) repair session. **However**, Gupta et al. in figure 5 step (510) teach a flow diagram in which data is retransmitted and determined whether many receivers have reported an information packet missing if so, then that packet is multicasted to the receivers participating in the multicast session, at step (530) and the receivers that have already received the packet will simply ignore the newly retransmitted information. If a few receivers have failed to acknowledge the receipt of the information packet, however, the sender individually transmits (unicasts) that packet to each of those few receivers, at step (520) (see col. 12, lines 30-50). Further, Gupta et al. teach that the decision of when to multicast and when to unicast lost packets may be made according to a heuristic (scheduled) (an analytically calculated predetermined approach), or based on the number of participating receivers and responses submitted by them at the time of retransmission (see col. 12, lines 47-51) which the system of Gupta et al. basically teaching the same method of repairing data or packets. **Therefore**, it would have been obvious to a person having an ordinary skill in the art at the time the invention was made to follow the examples of data retransmission (for example see col. 25-63) and to follow the flow chart of figure to repair specific receivers. **This modification** would have been obvious because a person having ordinary skill in the art would have been motivated to do so because it would be relatively and yet high reliable in operation

As per claims 3 and 6-8:

Gupta et al. teach all the subject matter claimed in claims 1 and 2 including Gupta et al. teach that the decision of when to multicast and when to unicast lost packets may be made according to a heuristic (scheduled) (an analytically calculated predetermined approach), or based on the number of participating receivers and responses submitted by them at the time of retransmission (see col. 12, lines 47-51).

As per claim 4:

Gupta et al. teach all the subject matter claimed in claims 1 and 2 including Gupta et al. teach response rate monitored and adjusted by the sender and by the receivers and response periods can be a function of time, or a function of number of data packets received by a receiver (e.g., responses are submitted every 5 milliseconds or after receipt of 5 packets) (see col. 7, lines 16-22 and the flow chart steps of figures 3 and 4).

As per claims 5 and 13:

Gupta et al. teach all the subject matter claimed in claims 1 and 9 including Gupta et al. in figure 3 teach a flow diagram of step 310, the sender analyzes data-lose response generated by the receivers and the sender adjusts the response rate at step 330, so that the multicasting of information is accomplished most optimally (i.e., minimizing the network traffic, and maximizing error recovery and repair) (see col. 9, lines 23-33).

As per claim 11:

Gupta et al. teach all the subject matter claimed in claim 9 including Gupta et al. teach that the frequency at which responses are transmitted from the receivers to the sender establishes a receiver's response rate and the response rate is dependent upon one or more thresholds and these thresholds control the length of delay between each response.

As per claims 12, 17 and 20:

Gupta et al. teach all the subject matter claimed in claims 9, 15, 18 including Gupta et al. teach that the sender may request the receivers to increase their response rates if it detects a reduction in the number of participants and more network bandwidth becomes available once a number of receivers terminate their participation in the multicasting session. Thus, the remainder of participating receivers can take advantage of the additional available bandwidth by submitting more responses per unit of time (see col. 9, lines 5-61).

As per claims 16 and 19:

Gupta et al. teach all the subject matter claimed in claims 15, 18 including Gupta et al. teach that the decision of when to multicast and when to unicast lost packets may be made according to a heuristic (scheduled) (an analytically calculated predetermined approach), or based on the number of participating receivers and responses submitted by them at the time of retransmission (see col. 12, lines 47-51).

As per claims 21 and 22:

Gupta et al. teach all the subject matter claimed in claim 15 including Gupta et al. teach that the decision of when to multicast and when to unicast lost packets may be made according to a heuristic (scheduled) (an analytically calculated predetermined approach), or based on the number of participating receivers and responses submitted by them at the time of retransmission (see col. 12, lines 47-51). Gupta et al. **do not explicitly teach** scheduling point-to-multipoint (multicasting) repair session. **However**, Gupta et al. in figure 5 step (510) teach a flow diagram in which data is retransmitted and determined whether many receivers have reported an information packet missing if so, then that packet is multicasted to the receivers participating in

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the multicast session, at step (530) and the receivers that have already received the packet will simply ignore the newly retransmitted information. If a few receivers have failed to acknowledge the receipt of the information packet, however, the sender individually transmits (unicasts) that packet to each of those few receivers, at step (520) (see col. 12, lines 30-50). Further, Gupta et al. teach that the decision of when to multicast and when to unicast lost packets may be made according to a heuristic (scheduled) (an analytically calculated predetermined approach), or based on the number of participating receivers and responses submitted by them at the time of retransmission (see col. 12, lines 47-51) which the system of Gupta et al. basically teaching the same method of repairing data or packets. **Therefore**, it would have been obvious to a person having an ordinary skill in the art at the time the invention was made to follow the examples of data retransmission (for example see col. 25-63) and to follow the flow chart of figure to repair specific receivers. **This modification** would have been obvious because a person having ordinary skill in the art would have been motivated to do so because it would be relatively and yet high reliable in operation

As per claims 23 and 24:

Gupta et al. teach all the subject matter claimed in claim 18 including Gupta et al. teach that the decision of when to multicast and when to unicast lost packets may be made according to a heuristic (scheduled) (an analytically calculated predetermined approach), or based on the number of participating receivers and responses submitted by them at the time of retransmission (see col. 12, lines 47-51). Further Gupta et al. teach that the frequency at which responses are transmitted from the receivers to the sender establishes a receiver's response rate and the response rate is dependent upon one or more thresholds and these thresholds control the length of

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delay between each response (col. 8, lines 30-34). Gupta et al. **do not explicitly teach** scheduling point-to-multipoint (multicasting) repair session. **However**, Gupta et al. in figure 5 step (510) teach a flow diagram in which data is retransmitted and determined whether many receivers have reported an information packet missing if so, then that packet is multicasted to the receivers participating in the multicast session, at step (530) and the receivers that have already received the packet will simply ignore the newly retransmitted information. If a few receivers have failed to acknowledge the receipt of the information packet, however, the sender individually transmits (unicasts) that packet to each of those few receivers, at step (520) (see col. 12, lines 30-50). Further, Gupta et al. teach that the decision of when to multicast and when to unicast lost packets may be made according to a heuristic (scheduled) (an analytically calculated predetermined approach), or based on the number of participating receivers and responses submitted by them at the time of retransmission (see col. 12, lines 47-51) which the system of Gupta et al. basically teaching the same method of repairing data or packets. **Therefore**, it would have been obvious to a person having an ordinary skill in the art at the time the invention was made to follow the examples of data retransmission (for example see col. 25-63) and to follow the flow chart of figure to repair specific receivers. **This modification** would have been obvious because a person having ordinary skill in the art would have been motivated to do so because it would be relatively and yet high reliable in operation.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US PN: 6,278,716 Rubenstein et al.

US PN: 6,693,907 Wesley et al.

US PN: 6,275,859 Wesley et al.

US PN: 6,031,818 Lo et al.

US PN : 6,141,785 Hur et al.

6. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Esaw Abraham whose telephone number is (571) 272-3812. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are successful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for after final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Esaw Abraham

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Guy J. Lamarre
Primary Examiner